# LBIR1324

*2016-2017*

# Animal physiology

| 3.0 credits | 40.0 h + 5.0 h | 2q |
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| Teacher(s) : | Debier Cathy (coordinator) ; Donnay Isabelle ; |
| Language : | Français |
| Place of the course | Louvain-la-Neuve |
| Inline resources: | iCampus |
| Prerequisites : | Basis in embryology, animal physiology, cell and molecular biology as well as biochemistry<br>*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.* |
| Main themes : | The course focuses on the physiology of the main rent animals (ruminants, hog and horse). Comparisons are regularly made with humans and carnivores.<br><br>Anatomy and physiology of digestion:<br>- Compared anatomy and functional morphology of monogastrics and polygastrics<br>- Digestive functions and digestive glands: overview<br>- Mechanical and chemical digestion and absorption<br><br>Endocrinology<br>Anatomy and physiology of reproduction<br>Physiology of lactation |
| Aims : | a. Contribution of the activity to the referential (LO)<br>B1.3, B1.5, B3.2, B3.6, B3.7, B4.2, B6.2, B6.3, B8.1, B8.2, B8.5<br><br>b. Specific formulation for this activity in the learning outcomes of the programme.<br><br>At the end of this activity, the student :<br><br>- knows and understands the different steps of mechanical and chemical digestion, regulations associated to the digestive process, as well as absorption in different animal species;<br>- is able to compare the functioning of the digestive system of omnivores, carnivores and herbivores (mono- and polygastrics);<br>- is able to describe the role, the mode of action and the regulation of the main hormones;<br>- is able to describe the oestral cycle and its regulation;<br>- is able to compare the characteristics of the reproduction of the main rent animals;<br>- knows and understands the anatomy and the development of the mammary gland as well as the control of lactation;<br>- is able to connect the different concepts seen during the course in order to address clearly and precisely cross-cutting issues related to animal physiology.<br>*The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".* |
| Evaluation methods : | Oral examination with written preparation based on transversal questions. |
| Teaching methods : | Lectures with active learning activities (guided questions) and concrete examples. |
| Content : | 1. Endocrinology and hormonal regulation: description of the structure and mechanisms of action of hormones, hormonal receptors and dosages. Hypothalamus-hypophysis axis: hormones of the adenohypophysis and neurohypophysis. Thyroid hormones. Hormonal regulation of calcium. Adrenal glands: corticoids and catecholamines. Hormonal regulation of glycaemia. 2. Anatomy of the genital tract and physiology of reproduction: Anatomy of the male and female genital tracts. Spermatogenesis. Ovogenesis. Fertilization, embryonic development and implantation. Hormones of reproduction. Oestrous cycles in domestic mammals. Physiology of lactation: control of mammogenesis, lactogenesis and galactopoiesis. 3. Anatomy and physiology of digestion: Comparative digestive physiology (carnivores, omnivores and herbivores). Anatomy and functional morphology of monogastrics and polygastrics (livestock and free-ranging). Digestive functions and annex glands : global overview of secretions, motility and absorption. Forestomachs motility as well as feeding and merycic behaviour of ruminants. 4. Exercises : practical exercises focusing on the study of the anatomy of the digestive tract of monogastrics and polygastrics as well as videos and exercises illustrating the theoretical course. |
| Bibliography : | Support: Powerpoint files accessible on the intranet via iCampus. Reference books available to the BST library. Links to websites. |

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| Faculty or entity in charge: | AGRO |

| Programmes / formations proposant cette unité d'enseignement (UE) | | | | |
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| Intitulé du programme | Sigle | Credits | Prerequis | Acquis d'apprentissage |
| Bachelor in Bioengineering | BIR1BA | 3 | LBIO1231A **and** LBIR1220 | 🔍 |